

U. S. PTO Customer No. 25280

Case # 2077A

Claim 27 was found to be vague and indefinite because there were no active process steps. Claim 27 has been cancelled. Newly added independent claims 32 and 47 contain active process steps.

Claim 28 was found to be vague and indefinite, because of use of the terms "fiber density" and "fabric density," and lack of clarity on how a "conductivity gradient is formed." Claim 28 has been cancelled. The term fiber density alone has been used throughout the newly added claims. It is believed that the term "fiber density" clearly identifies the characteristic concentration of fibers per unit of volume of a fabric. The steps of forming a "conductivity gradient" have been included in the newly added claims.

Claim 30 was found to be vague and indefinite, because the term "low temperature melting polymer" fails to convey the intended melting temperature. Claim 30 has been cancelled. The newly added claims do not reference "low temperature melting" characteristics of polymers.

Claim 31 was found to be vague and indefinite because it depends directly from a cancelled claim, and "fabric" lacks antecedent basis. Claim 31 has been cancelled.

35 USC § 102

Claim 27 was rejected under 35 USC § 102, as being anticipated by Pittman et al. US 5,102,727.

Claim 27 has been cancelled. The newly added claims contain process steps and other limitations not found in Pittman et al. For example, Pittman et al. do not disclose applying a conductive coating to the fibers after fabric formation.

35 USC § 103

Claim 31 was rejected under 35 USC § 103(a) as being unpatentable over Pittman et al. US 5,102,727.

Claim 31 has been cancelled. Pittman et al. do not disclose or suggest applying a conductive coating after fabric formation. Accordingly, the newly added claims are considered to be non-obvious.

Claim 28 was rejected under 35 USC § 103(a) as being unpatentable over Adams, Jr. et al. US 5,316,830. Claim 28 has been cancelled.

Adams, Jr. et al. disclose that a conductivity gradient may be created in a fabric by selectively removing a conductive coating from the surface of the fibers. Thus, three steps are required: (1) fabric formation; (2) applying a conductive coating; and (3) selectively removing the conductive coating.

The present invention obviates the necessity of selectively removing the conductive coating by employing a fabric that will automatically contain a gradient when a conductive coating is applied to the fibers, because the characteristics of the fibers vary through the fabric thickness (prior to coating with a conductive polymer). For example, the surface area of fibers per unit of volume varies or the susceptibility of the fibers to being coated with a conduct coating varies through the thickness of the fabric.

Claim 29 was rejected under 35 USC § 103(a), as being unpatentable over Adams, Jr. et al. in view of Bunyan et al., US 6,248,393. Bunyan et al. further teaches to also apply a fire-retardant composition to an EMI shielding material.

Claim 29 has been cancelled. Newly added Claim 39 is directed to a second coating to the fabric, which may be a fire retardant. Nevertheless, for the reasons stated above, Adams, Jr. et al. do not suggest the method of making the underlying electromagnetically conductive fabric, having a conductivity gradient through its thickness.

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Claim 30 was rejected under 35 USC § 103(a), as being unpatentable over Adams, Jr. et al. in view of Pittman et al. The Examiner finds that the composite fabrics disclosed in Adams, Jr. et al. may be held together by needlepunching, as disclosed by Pittman et al.

Claim 30 has been cancelled. Newly added Claims 38 and 49 refer to needlepunched webs.

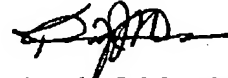
The method obtained from combining the teachings of Adams, Jr. et al and Pitman et al. does not disclose or teach the claimed process. The Adams, Jr. et al./Pitman et al. method comprises: (1) fabric formation; (2) applying a conductive coating; (3) selectively removing the conductive coating; and (4) needelpunching overlaying fabrics.

The method of Claims 38 and 49 comprises: (1) web formation; (2) needelpunching overlaying webs to form a fabric; and (3) applying a conductive coating. Thus it can be understood that the claimed process avoids the steps of separately forming, coating and removing the coating from a plurality fabrics, in order to create a gradient through the thickness of a fabric.

Applicants submit that they newly amended claims overcome the objections/ rejections raised by the Examiner. Applicants respectfully request allowance of the claims.

Respectfully requested,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to The Commissioner of Patents and Trademarks, Washington, DC 20231, on August 26, 2003, along with a postcard receipt.



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